

NOTES & NEWS

Soviet Contributions to Malacology in 1978

BY

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INTRODUCTION

AS IN PAST YEARS, herein are presented the titles of Soviet malacological literature as abstracted in the Referativny Zhurnal during the year 1978 (see The Veliger 21 (4): 490 for last year's listing and reference to those published earlier). Hopefully, this delineation of mainly Russian contributions to the field of molluscan studies will continue to be useful. Generally, we have followed the editors of the Referativny Zhurnal in the arrangement of categories and often we have appended a short summary of the contents of an individual paper.

To molluscan systematists the most important Soviet work continues to be the often detailed, revisionary monographs which sometimes introduce new taxa and frequently suggest fundamental alterations in accepted systems of classification. Special attention, thus, should be called to:

1) Shileiko's study on the naticoid gastropods as well as his major treatise on the helicacean stylommatophorans of the USSR and to his series of papers on the type species of the genera of the orthurethrous pulmonate family Buliminidae (= Enidae), which introduces a classificatory scheme quite different from that of Zilch; 2) Moskalev's revision of lepidid prosobranchs in which new genera are established and those previously poorly known given more extensive coverage; 3) Ivanova's monograph on the anomalodesmacean verticordiid bivalve *Policordia*; 4) Kudinskaya's and Minichev's description of a new species of the acochlidiid opisthobranch *Hedylopsis* along with a key to all known species;

5) Nesis' review of the enoploteuthid cephalopod subfamily Ancistrocheirinae; and 6) Nigmatullin's review of the systematics of the ommastrephid squids which might be compared to the recently published American work of Wormuth (1976. The biogeography and numerical taxonomy of the oegopsid squid family Ommastrephidae in the Pacific Ocean. Bull. Scripps Inst. Oceanogr. vol. 23).

Several notable items dealt with specific geographical areas or faunas: 1) Golikov and Kusakin published a detailed important work on the shell-bearing littoral snails of the USSR; 2) Golikov and Gul'bin extensively treated the prosobranchs of the Kurile Islands, and 3) Gul'bin and Fedchina discussed the closely juxtaposed sublittoral gastropods of the Commander Islands.

Other noteworthy contributions included: 1) Goruchev's discussion of the evolution of the buccinoid gastropod *Neptunea* in the Bering Sea which might well augment the recent research of Nelson (1978. The Veliger 21 (2): 203-215); 2) Nesis and Shevtsov's citation of the first data on the abyssal cephalopods in the Sea of Okhotsk; and 3) Golikov's description of the new genus *Costaria*, the northernmost fascioliariid.

Several of the physiological and biochemical papers indicated an intense interest in electrophoretic techniques, especially in distinguishing species. Different authors pointed out that previously recognized forms or 'species' were in reality only variants of single species and thus to be accorded the oblivion of synonymy.

One item which should be of especial interest to American workers doing research on the marine fauna of the north Pacific, north Atlantic or Arctic Oceans was Kafanov's discussion on the evolution of the malacofauna of the north temperate-boreal zones, for which we include a more extensive abstract than usual.

We thank Dr. Joseph Rosewater of the Smithsonian Institution who aided us in obtaining copies of the Referativny Zhurnal from the Library of Congress. Mrs. Mary Jo Dent carefully typed the manuscript.

Abbreviations and acronyms we have used are:

- AN - Akademiya nauk (Academy of Science)
- Biol. Morya - Biologiya Morya (Marine Biology)
- ES - English summary
- Mekh. - Mekhanizmy adaptatsii zhivyykh organizmov k vliyaniyu faktorov sredy (Adaptive mechanisms of living organisms to environmental factors), Leningrad
- NDVS - Nauch. Dokl. Vyssh. Shkol. Biol. Nauk. (Scientific Reports of the Higher Educational School for Biological Sciences)

- SID – Sbornik Rabot Instituta biologiya morya Dal'nevost. nauch. tsentr. Akad. Nauk. SSSR. – (Papers of the Marine Biological Institute of the Far Eastern Scientific Center, Academy of Science, USSR).
- Vlad. – Perv. Vses. konf. po mor. biol., Vladivostok. Tezisy dokl. (The first All-Union conference on marine biology, Vladivostok, Thesis Reports)
- VNK – Vses. nauch. konf. po ispol'z promyslov bespozvonoch. na pishchev. kormov. i tekhn. tseli, Odessa, Tezisy dokl. (All-Union scientific conference for the commercial use of invertebrates for food, fodder and technical purposes, Odessa, Thesis Reports)
- ZEBP – Zhurnal Evolyutsionnoi biokhimii i fiziologii. (Journal of evolutionary biochemistry and physiology).
- ZZ – Zoologicheskii Zhurnal (Zoological Journal)

GENERAL

BERGER, V. YA.

1977. The functional organization of the system of salt water adaptations in euryhaline marine mollusks. Vlad.: 15 - 16

BERZHBINSKAYA, N. A.

1977. The regulation of glycolysis at the systemic and molecular levels in molluscan tissues. Vlad.: 26 - 27

[Enzymes involved in glycolysis in chitons, bivalves, gastropods and cephalopods were investigated]

GORBATENKO, S. A., S. D. NIKOLAEV & S. V. POPOV

1975. Factors which influence the isotonic oxygen-carbonate composition of the shells in Caspian mollusks. SID, no. 4: 159 - 166

[Analysis shows that molluscan shells grow in isotopic equilibrium with the ^{18}O content of the water of the Caspian Sea, virtually independent of variations in temperature, suggesting the suitability of paleoisotopic studies of Pontic Pliocene-Quaternary mollusks]

IGNAT'EV, A. V. & G. A. YEVSEEV

1977. The temperature of growth of marine mollusks and their geographical distribution. Vlad.: 57 - 58

[18 species of stenohaline bivalves from the shelf zone of the Sea of Japan and the Sea of Okhotsk were studied; correlations were noted between the geographic distribution of each species and limiting thermal factors]

KAFANOV, A. I.

1978. On the centers of origin and several characteristics of the ecological evolution of the cold and temperate water marine malacofauna of the northern hemisphere. Biol. Morya, No. 1: 3 - 9

[The development of modern northern coldwater marine malacofaunas is intimately related to 3 main Paleogene zoogeographic regions: Northern-Japanese-Sakhalin, Western North American (Columbian) and Boreal-Central Tethyan (northeastern Atlantic), all genetically derived from a more remote tropical source fauna, that of the extremely rich, highly endemic Tethys of the Mesozoic. In the Cenozoic, there were 3 isolated tropical faunas; Indo-West

Pacific, Central American and West Indo-African as well as a small subtropical unit – the Lusitanian-Mediterranean.

The source fauna of the cold-temperate boreal was largely the northern periphery of the tropical areas, especially Tethyan relicts in the North Pacific (Northern Japanese-Sakhalin) derived from the Indo-Malayan Region. Today, the number of North Pacific endemic species is 6 to 8 times greater than in the North Atlantic (Boreal-Central Tethyan). This faunistic evolution, with the concomitant development of strong climatic provincialism, began with the global decline in temperatures in the Cenozoic and the extinction or southward displacement of less adjustable elements. With less competition, survivors in the northern extremes radiated polytypically, forming new but closely related taxa, usually with broad ecological tolerances or eurytopy and dispersed widely through the Boreal and Arctic regions. These elements were unable to reinvade the tropics or subtropics with their high species diversity and filled niches.]

KARPEVICH, A. F. & A. T. SHURIN

1977. The role of manganese in the metabolic processes of Baltic Sea mollusks. Biol. Morya, No. 6: 50 - 57 (ES)

[Increasing concentrations of manganese found in tissues of 3 species of bivalves (*Macoma balthica*, *Mya arenaria*, and *Dreissena polymorpha*) as ambient levels of Mn were raised until, beyond 20 mg/L, death ensued. Shells in Mn solutions for 2 months became blackened as a result of accretion of granules of Mn, and the authors suggest that this may be one manner in which Mn concretions are formed]

KHOKHUTKIN, I. M. & A. I. LAZAREVA

1977. Adaptive polymorphism in populations of terrestrial mollusks. Mekh., p. 151

LUKANIN, V. V.

1977. The complex effects of temperature and salinity on the adaptive reactions of some White Sea mollusks. Mekh., p. 84

REZNIK, Z. V.

1977. Zoogeographical features of the terrestrial molluscan fauna of the Stavropol Heights. Fauna Stavropol', No. 2: 37 - 43

[75 species were found, 42 from the Mediterranean subregion (of which 5 are found in the hilly regions of Europe, 12 from the Mediterranean and Pontic subregions, and 25 Caucasian endemics); 13 species from the Europe-Siberian subregion, and 19 species of wide Palearctic distribution]

ZOLOTAREV, V. N.

1975. Molluscan shell structure and paleotemperature analysis. SID, no. 4: 114 - 158

[Careful analysis of shell structures offers the possibility of evaluating ambient environmental temperatures prevalent at the time of the formation of various parts of the shell]

ZOLOTAREV, V. N. & A. V. IGNAT'EV

1977. Seasonal changes in basic shell layer thickness and the temperature at time of growth in marine mollusks. Biol. Morya, No. 5: 40 - 47 (ES)

[Mass-spectrometric analysis of isotopic-oxygen in the shell structure of 5 species showed correlation with growth intervals and temperature at time of growth. Annulations in the shell usually indicate

reduced shell deposition during the winter at minimal temperatures]

GASTROPODA, GENERAL

ALYAKRINSKAYA, I. O.

1978. Sexual dimorphism and age differences in morpho-biochemical characteristics of some gastropods. *ZZ* 57 (3): 359-363 (ES)

[In some gastropods sexual dimorphism is externally apparent in the different coloration or shape of male and female individuals. However, it is expressed also in lesser known internal ways: in different concentrations of respiratory pigments, total proteins, myoglobin and the specific weight of the hemolymph]

GOLIKOV, A. N. & O. G. KUSAKIN

1978. The shell-bearing littoral gastropods of the USSR. Nauka, Leningrad. 292 pp.; illust.

[This useful handbook discusses 148 species placed in 70 genera, 41 families, 14 orders and 5 subclasses]

GUL'BIN, V. V. & I. YU. FEDCHINA

1977. Sublittoral prosobranch gastropods of the Commander Islands. Vlad., p. 41

[A biogeographical characterization, including data on vertical distribution, is given for the 88 species of prosobranchs occurring around the Commander Islands]

PROSOBRANCHIA

ALYAKRINSKAYA, I. O. & S. N. DOLGOVA

1977. Quantitative contents of the respiratory pigments of *Rapana thomasi* Crosse in the Black Sea. *Dokl. AN SSSR* 236 (6): 1500-1502

[The mg per g of body weight is given for the respiratory substances, hemocyanin, tissue hemoglobin and myoglobin]

GOLIKOV, A. N.

1977. On the family Fascioliidae in temperate waters. *Issled. fauny moryei*, 21/29: 102-104 (ES)

[*Costaria borealis*, n. g., n. sp. was taken at 414 m to the east of Iturup Island in the Kurils, a first record of a fascioliid discovered in the temperate waters of the northern hemisphere]

GOLIKOV, A. N. & V. V. GUL'BIN

1977. Prosobranchs of the Kuril Island shelf. II. Order Hamiglossa-Homoeostropha. [In] *Fauna pribrezhn. zon. Kuril. ostrovov* (Fauna of the littoral zone of the Kuril Islands), Moscow, pp. 172-268

[Of 241 species and subspecies of prosobranchs, 128 were noted in the orders Hamiglossa, Toxoglossa, Heterostropha, Ptenoglossa and Homoeostropha. Species of *Mohnia*, *Sipho*, *Aulacofusus*, *Sulcosinus*, *Retifusus*, *Buccinum* (including 2 new buccinid genera), *Trophonopsis*, and *Oenopota* are delineated. The fauna of the southern part of the islands belongs to the Pacific-boreal subregion and differs

from the northern Kuril Islands; a special Kuril subprovince is recognized, especially in the central islands]

1978. Prosobranchs of the Kuril Island Shelf. I. Order Docoglossa-Entomostoma. *Zhivotn. i rastitel'n mir shel'fovikh zon Kurilisk. Ostrovov* (Fauna and flora of the Kuril Island shelf zone), Moscow, pp. 159-223

[Of 241 species and subspecies of prosobranchs collected, 113 belonged to the orders Docoglossa, Fissobranchia, Anisobranchia, Protopoda, Discopoda, Canalifera, Echinospirida, Aspidofora, and Entomostoma. 22 species and subspecies belong to *Puncturella*, *Scissurella*, *Margarites*, *Homalopoma*, *Lacunitonica*, *Onoba*, *Rissoella*, *Trichotropis*, *Torelia*, *Cerithiopsis* and *Furukawaia*. One new genus of Lacunidae and a new subgenus of Trochidae are proposed. Egg capsules of *Capulus nobilis*, *Lunatia pila*, and *Cryptonatica janthostoma* are described and figured for the first time]

GORUCHEV, V. N.

1978. The gastropod genus *Neptunea* Röding in the Bering Sea. Nauka, Moscow, 90 pp.

[Data on the biology, relationships and distribution of the species of *Neptunea* in this area augment a new taxonomic treatment of the genus]

IL'INA, L. B.

1975. On the growth changes of *Arcularia gibbosula*. *SID*, No. 4: 167-173

[A study of the successive growth changes from immature to mature stages in the nassid gastropod *Arcularia gibbosula* clearly indicates the systematic relationships of the species]

KARABELI, O. Z. & B. M. LOGVINENKO

1977. The distribution of the genus *Turricaspia*, section *Laevicaspia*, in the Caspian Sea. *Vestn. Moscow State University, Biologia*, No. 3: 57-63

[On the basis of benthic sampling in the central and southern parts of the Caspian (321 stations), the vertical and horizontal ranges and substrate preferences of the 4 species of *Laevicaspia* were established]

1978. The distribution of *Theodoxus*, family Neritidae, in central and southern parts of the Caspian Sea. *NDVS*, No. 2: 42-46

[321 bottom stations were investigated and the ranges of *Theodoxus* established along with its depth distribution and substrate preferences]

KARTAVTSEV, YU. F.

1976. Color polymorphism in the shells of the gastropod mollusk, *Littorina brevicula* (Philippi). *SID* No. 5: 93-98

[3 color forms of this species occur in Vostok Bay of the Maritime Province]

MOSKALEV, L. I.

1977. Revision of Lepetidae of the World Ocean. *Tr. In-ta okeanol. AN SSSR* 108: 52-78 (ES)

[Two new genera, *Limalepeta* and *Bathylepeta* are established and diagnoses and further information given on *Lepeta*, *Iothia*, *Propilidium*, *Cryptobranchia*, *Notocrater*, *Maoricrater* and *Punctolepeta*]

SHILEIKO, A. A.

1977. Material on the morphology of the Naticoidea and problems of the taxonomy of the superfamily. Tr. In-ta okeanol. AN SSSR 108: 79 - 97, 9 figs. (ES)

[17 representatives of the superfamily were studied and the families Polinicipidae and Naticidae, with Naticinae and Sininae, recognized. The Polinicipidae are distinguished by having: 1) the cephalopodial portion of the male gonoduct as an open groove; 2) a simple, uniform penis and 3) a horny operculum. The Naticidae have a closed male gonoduct, a variable, complicated penis and a corneous or calcareous operculum; the Sininae have the shell reduced. The new genus *Scarlatia* (type-species, *Natica fortunei* Reeve) is described]

SHUSTOV, A. I.

1978. An analysis of the correlative structures of morphological features of the *Bithynia leachi* group. Zhiznen tsikly, ekol. i morfol. gel'mintov zhivotnikh Kazakhstana (The life cycles, ecology and morphology of helminths of Kazakhstan), Alma-Ata, pp. 52 - 61

[The conchological features of the *Bithynia leachi* complex were studied statistically, showing that *B. l. troscheli* and *B. l. inflata* are mere varieties and not real subspecies]

OPISTHOBRANCHIA

KUDINSKAYA, E. V. & YU. S. MINICHEV

1977. Psammological Essays. 1. The organization and systematic placement of *Hedylopsis murmanica* sp. n. (Acochlidiiida). Trudy Petergof. biol. in-ta LGU (Leningrad State University), No. 6: 69 - 86 (ES)

[The new species is an interstitial opisthobranch. A key to all species of *Hedylopsis* as well as a discussion of the phylogenetic relationships of the Acochlidiiida are provided]

OBUKHOVA, E. V.

1978. The functional morphology of the epithelium of the digestive glands in the nudibranch *Coryphella rufibranchialis*. Trudy Petrogof. biol. in-ta LGU (Leningrad State University), No. 26: 118 - 131 (ES)

[A light-optical and ultrastructural examination reveal 3 types of cells: 1) non-differentiated cells, 2) calcium (lime) cells with an albumen-synthesizing apparatus for active ion transport, 3) digestive cells, the cytoplasm of which is filled with heteromorphological vacuoles depending on the stage of the digestive cycle]

TERRESTRIAL PULMONATA

ALYAKRINSKAYA, I. O.

1977. Seasonal variations in the buffering capacity of the hemo-

lymph in *Helix pomatia*. Dokl. AN SSSR 236 (5): 1264-1266

[In periods of summer aestivation, winter hibernation, and nest digging, when normal aerobic respiration is disturbed, there is an increase in the buffering capacity of hemolymph]

MATEKIN, P. V. & V. M. MAKEEVA

1977. Polymorphic esterases and the distribution of *Bradybaena fruticum* Müll. Zh. obshch. biol. 38 (6): 908 - 913 (ES)

[Electrophoretic analysis of esterases in 3 populations of *Bradybaena fruticum* near Moscow showed that the populations are genetically distinct; esterase polymorphism was also correlated with phenotypic characters such as shell-banding]

SHILEIKO, A. A.

1977. The structure and systematic relationships of the species of the genus *Siraphorus* Lindholm 1925 (Enidae). NDVS, No. 9: 40 - 46

[Previously 2 species were assigned to *Siraphorus*: *entoptyx* Lindholm, now recognized as the sole species in *Siraphorus*, which is herein accorded subgeneric rank in *Pseudonapaeus*; and *moltschanovi* Likharev and Rammel'meyer, for which a new and separate genus is erected, *Sirapharoides*. The structure of the reproductive organs of Central Asiatic enids differs from those of the Caucasus, and the generic name *Jaminia* is improperly applied to enids from Central Asia, especially the region of Tyan-Shan]

1978. A study of type-species of certain generic taxa in the Buliminidae (=Enidae). 1. Species of Middle and Central Asia. ZZ 57 (3): 344 - 358 (ES)

[The external appearance and internal reproductive structures of 12 taxa are described: *Pupinidius*, *Serina*, *Subzebrinus*, *Styloptychus*, *Chondrulopsina*, *Mastoides*, *Parachondrula*, *Laeonapaeus*, *Pseudopetraeus*, *Laevozebrinus*, *Chondrulopsis*, and *Pseudonapaeus*]

1978. A study of the type-species of the generic group taxa of the Buliminidae (=Enidae). II. Species of Europe, Near East and Asia Minor. ZZ 57 (4): 512 - 522 (ES)

[The genital anatomy and shells are described and figured for 10 taxa: *Ena*, *Zebrina*, *Buliminus*, *Pene*, *Jaminia*, *Antichondrus*, *Chondrula*, *Eubrephulus*, *Geminula*, and *Pseudochondrula*]

1978. A study of the type-species of the generic group taxa of the Buliminidae (=Enidae). III. Species of the Crimea and Caucasus. Problems of familial systematics. ZZ 57 (6): 834 - 850 (ES)

[The groups, *Caucasicola*, *Peristoma*, *Thoanteus*, *Brephulopsis*, *Ramusculus*, and *Retowskia* are characterized by their conchological and reproductive features. A new classification and phylogeny of the family is proposed wherein 8 subfamilies are recognized: Chondrulinae, Eninae, Retowskiinae, Multidentulinae, Bulimininae, Jamininae, Chondrulopsininae and Pseudonapaeinae]

1978. Terrestrial mollusks of the superfamily Helicoidea. Fauna of the USSR, Mollusks vol. 3, prt. 6, 384 pp.; 6 figs. Nauka, Leningrad

[This important revision of the superfamily, with lengthy introduction on the biology and morphology of helicacean snails, discusses 166 Recent and 15 fossil Soviet species, giving figures of the shells and genital anatomy; several alterations of previously accepted suprageneric classifications are introduced]

AQUATIC PULMONATA

GOROKHOV, V. V.

1978. The ecological adaptation of *Lymnaea truncula* to man-made alterations to its normal habitat. Rastitel'n. i zhivotn. naselenie Moskvy i Podmoskov'ya (Floral and faunal populations in Moscow and vicinity), Moscow, pp. 126 - 127

[An account of the occurrence of populations of this species in disturbed environments in the vicinity of Moscow]

KAMARDIN, N. N. & V. A. SOKOLOV

1977. A study of the structure and functional characteristics of the osphradium of *Lymnaea*. Mekhan. sensor. retseptsiy (The mechanism of sensory receptivity), Leningrad, pp. 183 - 188

POTANINA, N. V., V. I. STAROSTIN & M. A. LANGE

1977. Autoradiographic examination of amoebocytes in the blood of *Lymnaea stagnalis*. Zh. obshch. biol. 38 (6): 940 - 944 (ES)

SOKOLOV, V. A. & N. N. KAMARDIN

1977. On the possibility of the differentiation of osmotic and chemical components during irritation of the osphradial system of the pond snail. Mekh., pp. 127 - 128

ZAITSOVA, O. V.

1978. Histochemical examination of the osphradium in *Lymnaea stagnalis*. Morfol. osnovy funkts. evolutsii (Morphological survey of functional evolution), Leningrad, pp. 18 - 23

[The osphradium, a chemoreceptor, is an isolated epithelial channel innervated by numerous sensory fibers having their endings on the epithelial surface. Cytochemical study reveals 2 moieties in the epithelial mucus, an acid mucopolysaccharide and a glycoprotein]

ZAITSOVA, O. V., V. A. KOVALEV & L. S. BOCHAROVA

1978. A study of the morpho-functional interrelationships of the sensory epithelium and statoconia in the statocysts of *Lymnaea stagnalis*. ZEBP 14 (3): 307 - 309

[The statoconia have an egg-like shape (from 4.5×2.4 to $11.0 \times 6.6 \mu\text{m}$) and lie freely in the statocyst cavity, in contact with the cilia of the sensitive cells. These cilia are about $7.5 \mu\text{m}$ long and are placed about 1.4 to $1.5 \mu\text{m}$ apart, with supporting microvillary structures scattered among them. The position of the animal is monitored by the constant functional polarization of the sensitivity of the statocysts via the presence or absence of contact between the statoconia and the cilia]

BIVALVIA

ALYAKRINSKAYA, I. O.

1978. Biochemical adaptation to desiccating conditions in bivalves of Kurshsky (Courland) Bay in the Baltic Sea. ZZ 57 (1): 136 - 138 (ES)

[During desiccation, calcium ions, provided by the dissolution of the crystalline style and the shell itself, are incorporated as buffers into the hemolymph to offset increased acidity in *Anodonta complanata*, *Unio tumidus*, and *Dreissena polymorpha*]

BUROVINA, I. V., O. A. GONCHAREVSKAYA & N. B. PIVOVAROVA

1978. X-ray microanalysis of the elementary composition of hemolymph in the mussel, *Mytilus edulis*. ZEBP 14 (3): 241 - 245

[In a study of the ions of Na, K, Cl, Ca, P, S, and Mg, in mussels in waters of low salinity, it was shown that K was accumulated in the hemolymph at higher concentrations than that of the environmental medium]

GOROMOSOVA, S. A.

1977. Elements of carbohydrate metabolism of mussel (*Mytilus*) in connection with adaptations to environmental extremes. Ekol.-fiziol. issled. v prirode i eksperiment. Frunze, pp. 155 - 169

IVANOVA, V. L.

1977. New data on the composition and distribution of the deepwater genus *Policordia* Dall, Bartsch, and Rehder. Tr. Inta okeanol. AN SSSR 108: 173 - 197; 18 figs. (ES)

[2 new subgenera with 8 new species are recognized anatomically: *Angustebranchia* with 5 species in the ultra-abyssal Kurile-Kamchatka Trench and *Latebranchia* with 8 species, mostly of bathial-abyssal occurrence in the Pacific Ocean]

KARPENKO, A. A.

1977. Cardiac rhythm and the physiological condition of the littoral scallop (*Patinopecten yessoensis*). Vlad.: 65 - 66

[Cardiac rhythm is a good indication of the level of activity of metabolism in bivalves. In this scallop, it rises with rising temperatures, increases after swimming and in the proximity of predators like starfish, and rises sharply with lowered salinity]

KARTAVTSEV, YU. F., S. M. NIKIFOROV & A. I. PUDOVKIN

1977. The taxonomic position and genetic variability of *Crenomytilus grayanus*. VNK, pp. 41 - 42

[Electrophoretic analysis fails to support the contention of Smirnov that there are 2 taxonomically separable forms of this species]

KHOBOT'EV, V. G.

1978. On the ability of unionids to regulate the ionic composition of water. Biopovrezhdeniya materialov i zashchita ot nikh (Bio-damages of materials and the defense against them), Moscow, p. 11

[Freshwater bivalves are indicators and regulators of alkaline concentrations]

KRASNOV, YE. V.

1977. Non-specific adaptation by marine mollusks to the process of calcification. Materiali 2-go Simpoz. Protsesti adaptatsii i biol. aktivn. veshchestva, Vladivostok, 1975, pp. 42 - 46

KUKIN, A. F.

1976. The reproductive cycle of *Swiftopecten swifti*. SID No. 5: 122 - 130

[Normally gonochoristic (only 1 hermaphrodite found in more than 200 individuals), *Swiftopecten swifti* in Vostok Bay spawns from August through the first half of September at 21-22° C. Histological studies document changes in the gonad]

LOGVINENKO, B. M., O. P. KODOLOVA & O. YU. PRABDUKHINA

1979. Redkollegiya Biol. Nauki (Editorial Board, Biological Science), Moscow, 17 pp. (manuscript deposited in VINITI)

[Electrophoretic analysis of populations of *Mytilus galloprovincialis* and *Ostrea edulis* in the Black Sea]

LYUTSKANOV, D.

- 1975(1976). A biometrical study of *Dreissena polymorpha* Pallas in Shablessky Lake. Nauch. trudy Plovdiv. Univ., Biol. 13 (4): 227 - 236 (Bulgarian; Russian and French summaries)

[Analysis of 2 populations from 2 depths showed adaptive differences in both conchological and anatomical parameters]

MARCHENKO, A. A. & A. L. POLENOV

1977. On the participation of Gomori-positive neuro-secretory cells in *Mytilus edulis* L. in adapting to hypoxia. Ekol.-fiziol. issled. v prirode i eksperimente. Frunze, pp. 223 - 224

MARGULIS, B. A. & G. P. PINAEV

1977. The composition of the muscle albumens and its systematic significance in bivalve classifications. Vlad.: 99

[Adductor muscle extracts from 25 species of bivalves from the Seas of Japan and Okhotsk were examined electrophoretically and a phenogram of relationships constructed, which validated the classification of Nevesskaya and her colleagues]

MEDVEDEVA, L. A.

1976. The reproductive cycle of *Spisula sachalinensis*. SID No. 5: 131 - 135

NEVESSKAYA, L. A.

1975. Ontogenetic development of the shell and various modes of speciation in bivalves. SID No. 4: 17 - 34

[Analysis of ontogenesis of the shells of 30 Miocene and Quaternary species of bivalves revealed the occurrence of the evolution of some species by neotony]

NIKIFOROV, S. M.

1977. On the systematics of the oysters of the southern littoral of the maritime province. Vlad.: 108

[Electrophoretic analysis of various tissue extracts shows that *Crassostrea gigas* is a single species, not 3 distinct ones]

NIKIFOROV, S. M. & A. I. PUDOVKIN

1977. Genetic and morphometric variability in *Crassostrea gigas*. VNK: 60 - 61

[Electrophoretic data indicate that only a single species of oyster, *Crassostrea gigas*, inhabits Peter the Great Bay]

NISTRATOVA, S. N., V. N. DANILOVA & I. S. NIKOL'SKAYA

1978. Seasonal changes in the sensitivity to acetylcholine in the cardiac muscle of *Anodonta complanata* and *A. piscinalis*. ZE BP 14 (4): 358 - 364 (ES)

[The greatest change in sensitivity occurs at spawning when gametes are transferred and fertilization takes place with retention of zygotes in the ctenidia and before development of the glochidia in the marsupium]

PINAEV, G. P.

1978. Levels of organization in the retractive apparatus of the adductor muscles of bivalves. 3-ya vsyes. konf. po biokhimi myshch (Third All-Union conference on the biochemistry of muscles), Moscow, pp. 13 - 15

[Electrophoresis of muscle proteins in 26 species of bivalves confirmed their systematic placements and established a correlation between the contractile system and the quantities of actin, myosin and paramyosin]

PLISETSKAYA, E. M.

1977. Insulin in mollusks and its role in the regulation of the carbohydrate metabolism. ZEBP 13 (5): 600 - 606 (ES)

[Insulin or an enzyme very similar to it is produced in intestinal cells of the freshwater mussels *Anodonta cygnea* and *Unio pictorum*]

PREMINOER, N. K.

1977. Protein composition of the contractile apparatus of muscle tissue in the mussel, *Crenomytilus grayanus*. Biol. Morya, No. 5: 82 - 84

[Electrophoretic analysis showed high paramyosin and low myosin in anterior byssal retractor muscle and 2 parts of the adductor muscles, but the reverse obtained in muscle tissues of the mantle, heart and foot]

PUNIN, M. YU.

1978. The cellular composition of the digestive gland of White Sea lamellibranchs. Trudy Petergof. biol. in-ta LGU (Leningrad State University), No. 26: 132 - 144 (ES)

[Morphological and histological studies were undertaken on *Mya arenaria*, *M. truncata*, *Cyprina islandica*, *Cardium ciliatum*, *Serripes groenlandicus*, *Musculus discors* and *Modiolus modiolus*. A great deal of similarity was discovered in the histological structure of their digestive glands]

ROMANENKO, V. D., O. M. ARSAN, V. D. SOLOMATINA,

S. P. VESEL'SKII, V. P. PRYADKO & N. YU. YEVTUSHENKO

1977. Ionic exchange and the role of calcium in *Anodonta cygnea*. Gidrobiol. zh. 13 (5): 115 - 119

SKUL'SKII, I. A., N. B. PRIVOVAROVA, T. I. IVANOVA, V. G. LEONT'EV, I. V. BUROVINA & A. F. FEDOROV

1977. The adaptation of neuro-muscular cells in mussels to decreases in salinity. Vlad.: 129 - 130

STADNICHENKO, A. P.

1978. Mollusks of the family Sphaeriidae in the Crimea. Report I. Vestn. zoologii 1: 67 - 73

[4 species were found in 40 stations from Simferopol to Feodosia: *Euglesa casertana*, *E. personata*, *Musculium lacustre* v. *major*, and *E. henslowana* v. *inappendiculata*, the last being new to the Crimea. The first 3 are rheophilic while the last prefers slow water and is found only in Salgira Creek at Pereval'noye]

SVESHNIKOV, V. A.

1977. Aspects of the life cycle of the Far Eastern mytilid species *Crenomytilus grayana*. Dokl. AN SSSR 226 (4): 1028 - 1031

[Interacting periods of the life cycle may be recognized: The pelagic larvae are attracted to the benthic adults, settle and attach selectively by their byssal threads; initially the immatures live in the lower tier, sheltered somewhat from predators and grow rapidly; subsequently growth is hindered as competition increases for space and resources]

VARAKSYN, A. A.

1977. On the neurosecretions of the mytilid (*Crenomytilus grayanus*) and the pectinid (*Patinopecten yessoensis*). Biol. Morya. No. 4: 58 - 65 (ES)

[Morphometric and cytological investigations show that neurosecretory activity in the cerebropleural, visceral and pedal ganglia of the males and females of this species alters during the course of the year, presumably reflecting a correlation with sexual activity]

VASIL'eva, V. S.

1978. Heat retention of cells in the upper littoral sand dwelling infaunal bivalves of Peter the Great Bay (Sea of Japan). Biol. Morya. No. 1: 53 - 57

[8 species are dealt with. Heat retention in these bottom dwelling, infaunal invertebrates depends on their vertical and geographical distribution as well as on the ambient temperature]

YAKOVLEV, YU. M.

1978. The reproductive cycle of the giant oyster (*Crassostrea gigas*) in the Sea of Japan. Biol. Morya, No. 3: 85 - 87 (ES)

[Histological study of gametogenesis shows, during the course of the year, specific seasonal stages in the gonad: spawning, post-spawning, reduction, growth, maturation and prespawning]

YAVNOV, S. V.

1977. Secretion of growth layers in the internal structure of the shell in some species of the Mactridae. Vlad.: 156 - 157

[*Spisula sachalinensis*, *S. voyi*, and *Mactra sulcalaria* were studied; the outer shell layer is cross-lamellar and has 2 sublayers; the inner shell layer is complex-cross-lamellar; growth intervals, for as short a time as a week, can be detected]

YEVSEEV, G. A.

1975. Characteristics of the ontogenesis of the pallial sinus in *Macoma balthica*. SID, No. 4: 75 - 82

[Slight differences in the configurations of the pallial sinus, apparently correlated with salinity, separate western (Arctic-Baltic) and eastern (Pacific) populations of *Macoma balthica*]

1976. The origin of Vostok (East) Bay in the Sea of Japan and the history of its bivalve fauna. SID, No. 5: 23 - 62

[The formation of Vostok Bay began 8000-9000 years BP during a cold boreal period when 22 species of bivalves, mostly cold water forms, were found there. Postglacial transgression (8000-2000 years BP) found 45-49 species with the % of cold water species declining. Greatest diversity occurred during the last transgression when the sea level was up to 1 m higher than at present and 60 bivalve species were present, most of them warm water elements]

ZORINA, I. P.

1978. New bivalve species of the Gulf of Tonkin (South China Sea). Tr. zool. inst. AN SSSR 61: 193 - 203

[From the region of the delta of the Red River, Fai-Tsi-Long Archipelago and Hainan Island are described as new with figures, dimensions, distributional and ecological data: *Phacoides scarlatoi*, *Pillucina vietnamica*, *Codakia golikovi*, *Pitar levis*, *P. sulcata*, *Diplodonta gurjanovae*, *Raeta lactea*, *Moerella fragilis*, and *Gari tonkinensis*]

CEPHALOPODA

BURUKOVSKII, R. N., G. V. ZUEV, CH. M. NIGMATULLIN &

M. A. TSYMBAL

1977. A methodical basis for recognizing the extent of maturity in the female reproductive system of squids, using *Sthenoteuthis pteropus* as an example. ZZ 56 (12): 1781 - 1791

[Several stages of the continuous process of maturation are recognized and suggested to be typical of all squids. These are separable mainly into those associated with oogenesis along with the development of accessory reproductive organs, and those connected with the accumulation of mature eggs in the oviduct]

DUBININA, T. S.

1977. Characteristics of the morphology of the larvae of Onychoteuthidae in the tropical Atlantic. VNK, pp. 34 - 35

[The larvae of 4 species are described, falling into 2 types: 1) the more primitive *Onykia* including *Onykia* and *Moroteuthis* with mantle length of 8 mm; and 2) the more advanced *Onychoteuthis*, including *Onychoteuthis* and *Ancistroteuthis* with mantle lengths between 13-15 mm. Allometric growth patterns are noted in the arms, tentacles, and penis]

NESIS, K. N. & G. A. SHEVTSOV

1977. Preliminary information on the abyssal cephalopods in the Sea of Okhotsk. Biol. Morya, No. 5: 76 - 77 (ES)

[In bottom dredgings of up to 3400 m in June, 1975, 7 specimens of 5 species were taken: *Gonatopsis borealis*, *G. okutani*, *Grimptoteuthis albatrossi*, *Belonella borealis*, *Benthoctopus profundorum*. All specimens, except those of the first species, were mature or maturing, their dimensions close to or exceeding the maximum reported. It was noted that *Belonella pacifica pacifica* is a synonym of *B. belone* and that *B. p. borealis* is an independent species]

NESIS, K. N.

1978. The conference on the study of cephalopods. Kaliningrad, October 1976. Biol. Morya, No. 1: 83-84

[Summary of papers presented at meeting]

1978. The subfamily Ancistrocheirinae (Enoploteuthidae). ZZ 57 (3): 446-450 (ES)

[The subfamily previously included *Thelidioteuthis alessandrinii*, known from a larvae and juvenile, and *Ancistrocheirus lesueuri*, known only from adults. Recently collected specimens show that *Thelidioteuthis* is a junior synonym of *Ancistrocheirus* though both *alessandrinii* and *lesueuri* are good species, the former being cosmopolitan in the tropics; the range of the latter is unknown]

NIGMATULLIN, CH. M.

1977. Relationships and ecological structures in squids of the family Ommastrephidae. VNK, pp. 55-56

[Taxonomic characters grade from most primitive in the subfamily Illicinae, to intermediate in Todarodinae and Ornithoteuthinae to most advanced in Ommastrephinae. Ecological specializations parallel this trend: more primitive representatives are sublittoral, mostly partly benthic forms which lay eggs on the bottom, intermediate forms are found mostly over the slope, and the most advanced, or evolutionarily youngest, include oceanic forms with pelagic eggs and considerable development of photophores]

PETROV, O. A.

1977. On the fertility of the New Zealand squid, *Notodarus sloani sloani*. VNK: 63-64

[The gonads of 40 females, collected in February-April, were examined. 3-4 generations of eggs, from 0.1-1.5 mm in diameter, were discovered in the ovaries in various phases. Most oocytes were on the surface of the ovary, spherical or oval in shape, and from yellowish to amber in color. Although no clear relationship between the size of the female and the diameter of the ova was noted, there was a direct correlation between the size of the female and the number of ova: as the length of the mantle increased to 1 cm, the quantity of eggs grew to an average of 80 000 each; females larger than 38 cm had as many as 550 000]

ROZENGART, E. V., S. P. SHEVTSOVA & L. M. EPSHTEIN

1977. The properties of cholinesterase in the optic ganglia of the Teuthidae [sic]. VNK: 76-77

[A large amount of cholinesterase is contained in the tissues of the optic ganglia, and its properties vary, as a correlate of the life history of the animal, in different species, such as *Ommastrephes bartrami* and *Illex illecebrosus*]

SHEVTSOVA, S. P., A. P. BRESTKIN, K. N. NESIS & E. V. ROZENGART

1977. On the identity of the affinities of cholinesterase in the optic ganglia of *Ommastrephes bartrami* from the South Atlantic and from the Great Australian Bight. Okeanologia 17 (6): 1102-1106

ZALYGALIN, V. P., G. V. ZUEV & CH. M. NIGMATULLIN

1977. Characteristics of spermatophore production and male fertility in *Sthenoteuthis pteropus* (St.). VNK: 37-38

[A close correlation between mantle length and spermatophore length (of spermatophores in the spermatophoric sac) was established in a sample of over 70 male specimens; evidence for size dimorphism in spermatophores in the mantle cavity was presented]

ZUEV, G. V. & CH. M. NIGMATULLIN

1977. Basic elements of the internal structure of *Sthenoteuthis pteropus* (St.) in the northern part of the tropical Atlantic. VNK: 38-40

[Variable dimensions of the mantle are correlated with geographic positions and climatic conditions]

POLYPLACOPHORA

SIRENKO, B. I.

1976. Chitons of East Bay in the Sea of Japan. SID, No. 5: 87-92

[17 species are recognized with the following geographical affinities: 64% low-Boreal, 24% subtropical-low Boreal, and 12% pan-Boreal]

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